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AUTHOR Das, Bikram K.
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ABSTRACT

Some of the "supra-grammatical" features of scripts written by undergraduate students in India are examined. The script writing was a test administered to assess the proficiency of students in the advanced cognitive and rhetorical skills involved in composition, both in their native language and English. The particular type of composition chosen for investigation was expository writing, or that which is disigned to inform. The test was designed to present the students with specific problems of expository writing, and to force them to use certain anticipated rhetorical structures and strategies. The writing task was based upon a statistical table on fatal motorcycle accidents, and required interpretation and explanation. Both the interpretation and explanation of facts involved drawing inferences from available evidence, making generalizations, and summarizing facts. In addition, students had to adopt certain hypotheses to explain facts, for which no evidence was directly available. Examples from the scripts are analyzed. Oral and written communication are discussed in light of the finding that bad writing has many of the qualities of spontaneous speech. What primarily seemed to distinguish bad writing from good was the presence of linearity and literalness. (SW)

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An Analysis of Some 'Supra-grammatical' Aspects of Writing Done by Undergraduate Students

Bikram K. Das

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1. The Theoretical Framework

In an earlier paper (*CIEFL Bulletin* XIV, 1, 43-62), the author reported briefly a series of three tests administered to 100 undergraduate students in order to assess their proficiency in the 'advanced' cognitive and rhetorical skills involved in composition, both in the mother-tongue and English.

The tests were part of an empirical study attempting to analyse and identify some of these advanced skills, and to set up criteria which could be utilised in evaluating the 'supra-grammatical' aspects of composition (lying beyond syntax and lexis).

To recapitulate: it was hypothesized that

a. the advanced skills are reflected mainly in the ability of students to control and manipulate a constellation of *communicative functions* and *acts*, which are held together by a set of informational *strategies*.

(Communicative functions and acts may be considered analogous to 'nuclear' elements in the sentence, while informational strategies are analogous to 'operators'.)

b. Communicative functions and informational strategies are specific to each *type* of composition (discourse).

(The *types* existing in composition are determined by the dominant *communicative purpose*.)

In evaluating the advanced skills it is futile to attempt to establish criteria which will be valid for *all* kinds of composition. Each type of composition imposes different demands on the advanced skills and requires the

selection and operation of different rhetorical structures and strategies. In other words, it may not be possible to determine what the requirements of 'good' composition are, beyond the obvious mechanics of orthography and syntax, unless we specify the *type* of composition which has to be evaluated. This perhaps explains why teachers and evaluators have found it difficult to go beyond the mechanics in trying to decide what constitutes good writing.

The particular type of composition chosen for investigation was the one conventionally labelled *expository* writing. In traditional rhetoric, expository writing is contrasted *inter alia* with descriptive and narrative writing; but for this study both 'narration' and 'description' are posited as elements of expository writing—or rather, as *communicative functions* subsumed by the *communicative purpose* of 'informing'.

The following *ad hoc* taxonomy represents the rhetorical structure proposed for expository writing. (A detailed description has been provided in the earlier paper, already referred to.)

Composition Type: Expository

Level *Communicative Purpose:*

I Informing (Conveying Information)

II *Communicative Functions:*

a. Narration
b. Description
c. Summarising
d. Interpretation
e. Explanation

III *Communicative Acts:*

i. identifying actions, events, processes
ii. identifying participants and objects involved in (i); the relationships between them and the roles performed by them
iii. identifying *temporal* and *spatial* relationships
iv. identifying *cause-effect* relationships
v. making *comparisons/contrasts*
vi. *classifying* (events, participants, etc.)
vii. making *generalisations*
viii. providing *illustrations* (examples)
ix. drawing *inferences* from evidence
x. forming *hypotheses*, etc., etc.

It was hypothesized that expository writing involves the performance of all or some of the communicative functions listed above, further requiring the performance of all or some of the communicative acts.

It was further hypothesized that expository writing involves the use of some or all of a set of informational strategies.

(We shall not list the strategies which have been discussed in detail in the earlier paper at this point, as they shall be elaborated in the ensuing discussion.)

2. The Tests of the Advanced Skills

The three tests (referred to above) were so designed as to present the students with specific problems of expository writing, and to force them to use certain anticipated rhetorical structures and strategies. One could then attempt to correlate 'success' in writing with the performance and adoption of the desired communicative functions/acts and strategies.

In the present paper we shall attempt a detailed analysis of some of the scripts produced in response to one of the tests, in order to illustrate the kinds of considerations which were judged to be relevant to an evaluation of the supra-grammatical aspects of composition.

As has been explained in the earlier paper, this study chose to ignore considerations of grammatical 'correctness' in investigating the supra-grammatical features.

The students participating in the experiment wrote alternately in English and the mother-tongue; for any one of the tests, half the number wrote in English and the other half in the mother-tongue. Then the mother-tongue scripts were translated into English, while the English scripts were edited to eliminate all deviance of syntax and lexis. Care was taken to interfere as little as possible with the rhetorical features. Then the scripts were mixed up, and distributed among a number of judge-informants, who were asked to evaluate them for 'intellegibility'. They were asked, specifically to indicate:

a. how easy (or difficult) it was for them—as readers—to recover information from each script;

b. the amount of information recovered; and

c. the quality of the information recovered.

As anticipated, no significant difference was found in the quality of the two sets of scripts in relation to 'intelligibility', which was assumed, in the case of expository or 'informative' writing, to be a measure of proficiency in the advanced skills.

Before we go on to analyse some of the scripts in detail, a few general observations relevant to the discussion need to be offered.

3. Oral and Written Communication

A point that seemed to emerge from the study—which can be considered neither profound nor original—is that 'bad' writing has many of the qualities of spontaneous speech. What chiefly seemed to distinguish 'bad' writing from 'good', at least in the case of expository writing, was the presence of *linearity* and *literalness*.

Speech, by its very nature, is spontaneous. (We are not referring here to the 'scripted' talk, which is generally written before it is spoken, but to unrehearsed oral communication.) The great advantage that speech has over writing as a form of communication is its *immediacy*—its capacity to involve the listener powerfully, through an array of linguistic and paralinguistic devices not available to the user of writing. But this advantage is gained at a price. Unrehearsed speech is normally 'horizontal', or *linear*—that is, the various items of information which it has to communicate are merely strung together in linear sequence. The transmission of information, in such a case, is normally 'complete' only when the *last* item of information has been communicated; the hearer has to retrieve each item of information separately and assign it to his short-term memory while decoding the total message. This imposes a heavy burden on the short-term memory. To compensate for this, the speaker normally introduces a great deal of redundancy in the transmission; each item of information, in an unrehearsed talk, tends to be paraphrased and restated a number of times. The amount of redundancy necessary in unrehearsed oral communication would be intolerable in a piece of writing. Since the reader has the message available in the form of a visual record and can always go back to an earlier part of it when required, he does not have to strain his short-term memory. Hence, written communication requires and permits much less redundancy of information than does speech.

But the more fundamental point about writing is that it is essentially an unspontaneous and deliberate form of communication. If speech is 'natural' and innate, writing is artificial and contrived. Any piece of writing is an artefact. Writing has been described as a prosthetic device—the first piece of technology acquired by man. It has approximately the same relation to speech that *competence* has to *performance*; the writer has, or may be expected to have, the same freedom from slips, false starts, hesitation phenomena, etc., as the idealised speaker-hearer.

The writer normally has enough time to plan and structure his message —which is precisely what is not available to the speaker. But as a consequence, the reader makes much greater demands on the writer than the hearer does on the speaker. The speaker and the hearer (in face-to-face communication) seem to enter into a contract whereby the hearer agrees to condone the speaker's lack of structuring and organization, his linearity and redundance ; in return, he feels compensated by certain 'indexical' features of communication which facilitate the retrieval of information.

The reader, on the other hand, is much less forgiving. He *expects* a more sophisticated and elaborate presentation of information than is normally possible through spontaneous speech, precisely because he is dealing with a form of communication which permits the 'sender' to organise his message with far greater care.

As psycholinguists such as Goodman, Smith and Oller have demonstrated, the *grammar of expectancy* plays a very important part in the decoding of written messages. It was said earlier that the hearer normally has to process *each* discrete item of information, and that information retrieval is generally not complete until the last item of information has been transmitted. This is a consequence of the essential linearity of speech which, in turn, stems from its spontaneity and immediacy. The reader, on the contrary, *expects* that he will not have to process *all* the items of information available in a piece of text in order to decode it. He *expects* the writer to make use of certain 'cues' which will enable him to abstract the essential information, through a process of 'sampling'. The good, or efficient reader does *not* read everything that the text contains ; he knows that this is not necessary. He rapidly *constructs* his own version of the text with the help of the samples he collects, and then 'matches' the given text with his own version of it. As Oller (1972) puts it, reading is largely a process of 'analysis through synthesis'.

Just as the efficient reader is one who is able to decode a text adequately without having to retrieve *all* the information that it contains, the efficient writer is one who is able to *help* his reader decode the text without having to decode all the information that it contains. (We are not talking here of creative writing, which has its own norms and rules, but of 'ordinary' functional writing.) It is being proposed here that reading and writing can, as rhetorical operations, be considered 'mirror-images' of each other. The good reader is able to read efficiently because he develops certain stategies of 'informed guessing'. Conversely, the good writer should be able to make use of strategies which make 'informed guessing' (by the reader) *possible*.

If a slight digression may be permitted at this point, a significant corollary to the statement above would seem to be that a programme designed to teach efficient reading could easily, and with little additional effort, form a base for an effective programme of instruction in *writing*. Since reading has already been selected for the greatest or even exclusive attention in some ESL/EFL situations (perhaps including the Indian), it would appear that teaching writing through reading is both a desirable and feasible objective. In learning to read well, one may be expected to acquire important insights into some of the strategies of successful communication through writing, which could be utilised in one's own writing. Even now, reading *is* regarded as a productive exercise for the student learning to write, but it is assumed that the transfer from reading to writing occurs entirely at the level of 'code-learning'—that is, the acquisition of syntax and lexis. It is held that reading can help the student to acquire a wider linguistic repertoire, which he can then use to 'express' himself. This approach suggests that the learner tends to imitate or 'plagiarise' models of language use encountered by him in reading. This may well be true, though one would still have to explain how the learner is able to transfer words and patterns encountered in one context to a different context. But the proposal to exploit reading for writing, which is mooted here, goes beyond the imitation of *language*, conscious or otherwise; it suggests an emphasis on underlying rhetorical structures and strategies. The learner should, as we said earlier, be able to develop insights into these features of successful writing. How such insights can best be provided is something that we need to investigate. There is a tendency, in some of the new teaching materials based on discourse analysis, to 'parse' the rhetorical elements. Teachers (and writers of textbooks) have started a new kind of grammar teaching, which is threatening to replace the old: this is the teaching of discourse grammar, in place of the old-fashioned sentence grammar. Whether the new grammar will be any more useful than the old in helping students to write better is something that must be demonstrated.

But to return to our main concern: the efficient writer does seem to possess certain strategies which facilitate information retrieval by the reader. (The best speakers make use of these strategies too, but they seem to be characteristic of writing rather than of speech.) One of the aims of the present investigation was to attempt to identify some of these strategies.

There seem to be at least three strategies that the 'good' writer (of functional expository prose) employs:

i. the 'synthesis' of information, or the devising of a *topic generalisation* which serves to introduce as well as delimit and define the entire 'universe of discourse'.

As noted in the earlier paper, the topic generalisation occurs frequently at or near the beginning of a discourse block—which usually, but not always, coincides with a paragragh in the text. It can, however, occur almost anywhere in the paragraph, and commonly takes the form of a *concluding summary*, at the end of the paragraph. The concluding summary may either supplement the topic generalisation occurring earlier, or replace it altogether.

The value of the topic generalisation has been recognised in traditional rhetoric. Students are very often told to begin each paragraph with a 'topic sentence', but for most of them this may be just a prescribed ritual—like the capital letter used at the beginning of each sentence. It is doubtful whether students have any understanding of how a topic generalisation helps communication.

It may be interesting as well as useful to compare the 'information structure' of the sentence with that of the paragraph. It could perhaps be said that in most languages the elements containing the more significant items of information occur in 'unmarked' instances, in non-initial positions in the sentence. The elements occurring initially normally present the 'given' items of information, while the 'new' bits of information occur in penultimate or final positions. Can there be a psycholinguistic reason for structuring information this way? One is tempted to speculate that the significant items of information may be 'reserved' for non-initial positions in the utterance because the 'receptivity' of the listener increases as the utterance unfolds. Quite often, the opening words in an utterance are slurred or indistinct. Could it be possible that the listener does not normally attach much importance to the opening 'signals', but is more attentive to the following signals? If so, this might explain the tendency to place the significant items of information in non-initial positions. What function is served, then, by the 'given' bits of information normally occurring at the beginning of an utterance of sentence length? Apparently, the 'given' information is essential for establishing the context, before the 'new' information can be supplied. In short (sentence-length) utterances, the amount of vital contextual information may be rather small, hence the relative unimportance of the 'given' information.

The topic generalisation in the paragraph (wherever it may occur) serves as we said earlier, not only to provide the 'setting' or the context, but also to delimit the scope of discourse. It seems to combine, therefore, the functions of 'new' as well as 'given' items of information (at the sentence level), providing a microcosm of the entire universe of discourse represented by the text—a kind of map of the entire territory to be covered. Such a map does seem to help the reader in recovering information.

One would normally expect the topic generalization to occur at or near the beginning of a discourse block. The reason is obvious. Since the purpose of this device is to facilitate information retrieval and to make it unnecessary for the reader to retrieve *all* the items of information, the earlier it occurs in the discourse the more useful it can be to the reader. However, there is an opposing consideration. It may be said that the last item in a series of items of information is the most crucial, perhaps because it is the most 'recent', and hence the most easily recalled. One might, therefore, expect a tendency on the part of the writer (and more so on the part of the speaker) to position the most vital bits of information *last* in the discourse block. This explains the importance of the 'punch-line' in most jokes and anecdotes which helps to *clinch* the discourse.

What is then the 'favoured' position for the topic generalisation in the parargaph? So far, this is mainly a subject for speculation. But perhaps it will be possible to investigate empirically:

a. to what extent the presence of a topic generalisation does actually help the reader, or (conversely) how far the absence of such a device hinders comprehension; and

b. whether positioning the topic generalisation at or near the beginning of a discourse block is more 'effective' than positioning it at the end —in other words, whether an 'introduction' is more helpful than a 'summary'.

ii. The second of the prominent strategies which the efficient writer seems to use is the 'structuring' of information—that is, the arrangement of blocks, or 'clusters', of information in hierarchical patterns of subordination, superordination and co-ordination. (It is precisely this kind of 'structuring' that is brought out through 'notes' or 'schematic summaries' of texts.)

'Structuring' is one way of indicating the relative importance of pieces of information. It cuts directly across the principle of *linearity*, which we described as one of the characteristics of 'bad' writing. Writing (or speech) tends to be linear when the writer (or speaker) is too lazy to 'evaluate' the relative importance of the items of information he is trying to communicate, as well as the inter-relationships existing between them; he merely 'strings' the items together in a series of grammatical/logical co-ordinations. Linearity arises, then, from a failure to discriminate between things and to assign them to categories; it represents essentially an 'etic' view of phenomena, which rightfully belong to an 'emic' universe. A linear piece of writing is a rag-bag, where the 'customer' is expected to search through everything and find whatever may be of value. Structuring, on the other hand, imposes a kind of 'vertical' overview on the linear display of information items.

The value of structuring is, firstly, that it helps to group together and classify pieces of information. This kind of 'clustering' of information, it will be demonstrated, is helpful. Secondly, it helps the reader to relate pieces of information. Thirdly, it indicates (as stated above) the relative importance of pieces of information by assigning different 'ranks' or levels to them. The value of this will be apparent from the following section.

iii. The third point strategy, which overlaps considerably with the two that have been discussed, and yet deserves a place in this list, is what may be termed the 'weightage' of information.

We said earlier that the efficient reader does not have to process *all* the information present in a text, but is able to recover all the essential information swiftly. He is helped in doing this by a system of 'weightages' which the efficient writer seems to make use of. That is, there are fairly clear signals indicating the relative 'priorities' among items of information, which enable the reader to concentrate on the essentials.

The structuring of information, as we said earlier, is itself a kind of 'weightage'. But the effective writer may make use of other devices to 'highlight' a particular piece of information. One such device may be the positioning of a piece of discourse in the paragraph, which is comparable to the phenomenon of *thematization* at the sentence level. We do not yet know enough about the effect of placing items of information at different positions in the paragraph; this needs investigation.

Another form of weightage may be the amount of 'elaboration' given to an item of information. This may be an index of the relative importance of that item, in the writer's scheme.

There are other important strategies which this study has, in a rudimentary manner, been able to identify. But, for the discussion that follows, these three may be considered most significant.

It may be emphasized, once again, that these strategies together help to counter the tendency to *linear*, which seems to be 'natural' to most students learning to write. The other tendency is towards 'literalness'. This is a point which needs elaboration.

We tend to think, normally, of 'content' and 'expression' as distinct aspects of composition; most schemes of evaluation advocate the separation of these two 'levels'. There seems to be a belief that the 'content' is something that pre-exists, and is merely given linguistic articulation in the act of writing. It has been argued (for example) that teaching an Indian student to write in English is 'merely' a matter of giving him the English to write in.

This is a particularly naive view of the writing process: in fact, it is symptomatic of the confusion between *product* and *process* that has clouded the teaching of composition. Most teachers tend to view composition as *product*—as something the learner may be expected to 'do' *after* he has learnt 'language'. They ignore completely the problems which the student has to grapple with during the *process* of writing.

Writing is not merely the 'expression' of experience through language; it is a process through which experience is organised, shaped and, in fact, discovered. The *same* process of planning which helps a student to discover 'how' to say something also helps him to discover 'what' to say.

It is necessary to re-emphasize something that was said earlier: all composition is 'artificial', and any piece of writing is an artefact. Since writing, unlike speech, is essentially a reflective activity, where the process of 'organisation' must mediate between the discovery of content and its ultimate 'fleshing out' in words, the attempt to write is an attempt to *invent* to impose design and order on 'raw' experience.

When we say 'bad' writing tends to be 'literal', we mean that it lacks the element of 'invention': that the bad writer tends to put down his experiences 'raw', without attempting to process or organise them. 'Literalness', like 'linearity', may be an attribute of spontaneous speech, where the speaker has to transmit messages under such pressure that he has no time to assimilate, re-order and re-create the experience that he wishes to communicate. But the writer has no such excuse. He is expected, therefore, to be able to organise—both 'what' he writes and 'how' he writes it.

With that preamble, we may now begin to analyse some of the writing produced by the undergraduate students for our experiment.

4. Analysis of Scripts

For the third test in the series of three tests, the students were given the following 'stimulus':

Fatal Motorcycle Accidents in Khazanapur (1970-76)

Year	*Rainfall (in millimetres)*	*Number of crash helmets sold*	*Number of fatal motorcycle accidents*
1970	315	0	15
1971	299	0	12
1972	301	2	14
1973	415	7	37
1974	400	165	6
1975	307	215	2
1976	305	220	11

After this 'table' had been given to the students, they were asked to "write about the 'thing' (i.e., the 'table') shown to them, in such a way that a person reading what they had written would get a clear idea of what the 'thing' was without having seen it himself."

The rubric, it may be noticed, was vague and open to misinterpretation. This was deliberate. It was a part of our intention to investigate how each student interpreted the nature of the task given to him, and how this influenced the various decisions he took in writing. (The author is aware that this is not quite valid as an evaluation procedure, but it was hoped that it would help to reveal innate strategies of communication. In any case, the 'evaluation' was intended to be exploratory rather than definitive.)

(The stimuli used for the two earlier tests were, respectively, a film—specially produced for the experiment—and a set of 28 cartoons.)

Most students complained, at the outset, that they "didn't understand what they were required to do". No such complaint had been made during the two earlier tests. Obviously, therefore, the third test was found to be the most difficult.

The reason, perhaps, was that while the two earlier tasks had involved, primarily, problems of *narration* and *description*, the third task primarily involved *interpretation* and *explanation*, which are more complex communicative functions.

Narration involves the manipulation of a chronological sequence of events which are additionally linked (in most cases) by cause-effect relationships. *Description*, on the other hand, involves the setting up of 'part-whole' and 'part-part' relationships. But since all communication involves (as we have seen), the setting up of various hierarchical relationships between blocks of information, there is an element of description in any piece of narration. This invalidates, to some extent, the traditional categories of composition.

For the third task ('writing about' the given table of 'statistics') the students were required, basically, to correlate the three sets of variables (represented in the table) and to infer a general pattern, or 'law', which would help in explaining the phenomena recorded. In addition to *stating* the facts, therefore, they had to *interpret* the facts—that is, establish comparison/contrast. They had also to *explain* the facts through cause-effect relationships, which were not always obvious. Both the interpretation and explanation of facts involved the drawing of *inferences* from available evidence, the making of *generalisations*, and the *summarising* of facts. In addition, they had to adopt certain *hypotheses* to explain facts, for which no evidence was directly available.

[It will be noticed that all these operations—with one exception (i.e., 'summarising') — have been listed, in our taxonomy, as *communicative acts* (Level II), while *interpretation* and *explanation* have been represented as *communication functions* (Level II).]

Let us now see how the students attempted to deal with some of the rhetorical problems outlined above.

As expected, many (nearly 60 per cent) of the students proved to be highly *linear* in their presentation of the data provided. That is, they presented the 'facts' in step-by-step sequence, using only the chronological pattern presented in the table. One might interpret this as evidence of 'literalness' as well : since the table seemed to have only one principle of organisation, which was chronological, they adhered very faithfully and literally to the given stimulus, without trying to re-organise the facts in some other way. There was no attempt at *invention.*

About 25 per cent of the students merely set down the facts without any attempt at relating one set of facts to another. Thus, the presentation of facts which they provided was in no way more informative than the table : they merely 'paraphrased' the table.

Here are a few examples. (The examples have been drawn from the mother-tongue scripts as well as the English scripts).

> "In the year 1970, the rainfall was 315 mm, the number of crash helmets sold O, and fatal motorcycle accidents 15.
>
> 1971 — the rainfall decreased to 299 mm, the number of crash helmets sold was O (the same as in 1970) and the accidents decreased to 12.
>
> 1972—the rainfall increased to 301, the number of helmets sold was 2, and the number of accidents also increased to 14."

> "In 1971 the rainfall decreased and the number of accidents decreased too, but the number of crash helmets sold was the same as in 1971. In 1972, the rainfall, number of crash helmets sold and accidents increased together.
>
> In 1973, the rainfall, number of crash helmets sold and accidents increased in comparison with the previous year."

There is a rudimentary attempt at 'interpretation' in the second example: the three variables are linked together and a crude generalization attempted ("they increased together"). However, the information given provides no useful insights at all.

In most of the scripts, the patterns in which the information was arranged proved to be exasperatingly monotonous. This is well illustrated by the first example cited above: for each year, we are given the rainfall, followed by the number of crash helmets, followed by the number of accidents—exactly as in the table. In some scripts, however, this pattern was broken up and varied. This distinctly increased the 'acceptability' of the information. It was found that the mind (of the reader) has a tendency to reject a long series of statements of facts following a uniform pattern.

In some scripts, it was found that the 'quality' of information was distinctly superior because the factual statements were 'punctuated' by *comments* or *generaliastions*. Here is an example:

> "In 1970, the first year, the people of Khazanapur who used motorcycles did not perhaps know the use of helmets. That year the rainfall was 315 mm, and the number of motorcycle accidents 15. In 1971, the rainfall was 299 mm, which was less than in the previous year, and the motorcycle riders did not use helmets again. But the accidents were 12 in number, less than in the previous year. This suggests that the number of accidents depends on the rainfall. If there is low rainfall the accidents are fewer, and if there is heavy rainfall, the number of accidents is greater."

The presentation of facts in this example is long-winded, but the ability to make frequent comparison of ("less/more than") and to generalise from facts certianly improves the quality of information.

However, it is not enough merely to make comparisons; the comparisons have to be selective and significant. The following script illustrates this fact (negatively):

> "In 1971, due to slightly lower rainfall, the number of accidents was also slightly less. Next year, due to the use of more crash helmets, and slightly higher rainfall, the number of accidents is also greater."
> There are too many comparisons offered here, at too frequent intervals; moreover, they do not add upto anything significant.

What seems to help 'intelligibility' is the presence of *periodical* generalizations which sum up a group of preceding facts. Here is an example—though not a very good one.

> "In 1970, when the rainfall was 315 mm, and the number of crash helmets sold O, the number of accidents was 15. In 1971, when the rainfall was 255 mm. and the number of crash helmets sold O, the number of accidents was 12. *This shows that the less the rainfall, the smaller is the number of accidents.*

In 1972, when the rainfall was 301, and the number of helmets sold 2, there were 14 accidents, whereas in 1973, when the rainfall was 415 mm, and the number of crash helmets sold 7, the number of fatal accidents was 37. *This shows that the greater the rainfall, the higher is the number of fatal accidents, even though more crash helmets are sold.*" Although the monotony of the information pattern is distracting, the placement of the two pieces of generalisation is effective.

In all the scripts examined so far, the presentation of information follows a linear chronological plan—as in the table. But here is a different kind of linearity :

In 1971 the rainfall decreased by 16 mm, compared to 1970, then rose in 1972 by 2 mm; and in 1973 it became 415 mm, which was more than 1972 by 114 mm. Again it decreased to 400 mm in 1974 and to 305 mm in 1976."

"The rainfall in 1974 was 400 mm ; 1975 was next with 307 mm ; in 1976 the rainfall was 305 mm, and then came 1970 with 315 mm of rainfall, and the year 1971 was last."

The linearity is caused here not by chronological sequencing, but by the isolation of a single variable (rainfall). Since the 'problem' here is to correlate the different variables, this kind of 'discrete' presentation seems to make the treatment ineffective.

Earlier, in this paper, we mentioned the usefulness of presenting information in *clusters*, rather than as discrete items. The next example illustrates this point :

"First, let us consider the years 1970, 71, 72. We must notice that the rainfall for these years is, respectively, 315 mm, 299 mm and 301 mm, while the number of fatal accidents is 15, 12 and 14 respectively.

That is, in 1971 we have the highest rainfall for these years, and also the highest number of accidents; 1972 comes next, both in rainfall and the number of accidents, while 1971 has the lowest rainfall as well as number of accidents.

So we find that the higher the rainfall, the less is the number of accidents."

Some features of this particular script which seem to help intelligibility are :

i) the 'telescoping' of information for a group of years (1970-72);

ii) the selective preparation of data : only two of the variables (rainfall and accidents) are correlated, rather than all three together. This facilitates the making of comparisons as well as the drawing of generalisations.

iii) the deviation from the rigid chronological sequence, in the second paragraph. (The information pattern is : 1970-72-71 ; it is logical rather than chronological)

The information is thus presented in manageble 'chunks', instead of a baffling series of 'linear' facts.

The most important part of the task (in this case) was the ability to formulate a *central generalisation* combining two separate kinds of correlations—that is, to capture within a single general 'law' the relationship between rainfall and the number of accidents on the one hand, and the sale of crash helmets and the number of fatal accidents on the other. In the absence of such a central generalisation, the various items of information would not cohere into a meaningful pattern.

It was found that many of the students were to make the two different generalisations *separate* (that is, correlating rainfall to accidents and again to sale of crach helmets); but hardly anyone was able to collapse the two in to a single general 'law'.

A fairly large number of students, however, failed to make *one* generalisation from the data. Here is a typical example :

> "In 1970 and 71, no crash helmets were sold, *while* the rainfall was 315 mm and 299 mm respectively. The number of accidents was 15 and 12. In 1972, the people of Khazanapur used 2 helmets, *but* the number of accidents was 14. *But* we see that in 1973, the rainfall was the highest (415 mm) and the number of accidents was also the greatest (37) *and* 7 helmets were sold."

Several insightful generalisations could have been made here on the basis of the data which this student has managed to juxtapose (e g. the significance of 1973 having the highest rainfall as well as the largest number of acidents), but the writer does not attempt a single generalisation.

(Another interesting feature of this script is the incongruity of the logical relationships suggested by the linking devices "and", "but".)

Here are a few examples of scripts in which generalisations *were* attempted, but very inadequately :

> "So, if more motorcycle owners use crash helmets in the rainy season, the number of motorcycle accidents decreases."

(This student does attempt to formulate a 'law' connecting all the three variables, but the significance of one set of correlations (rainfall-accidents) is lost.)

"when there is less sale of helmets, there are less accidents. Of course, sometimes the number of accidents is determined by the rainfall."

"So it can be concluded that although the rainfall and the use of helmets has a certain relation to the accidents, it is the rider who is concerned more."

"These statistics show that by using helmets the accidents are reduced, inspite of the heavy rain."

The following generalisation is distinctly 'odd':

> "Although the accidents seem to be related to the sale of helmets and the rainfall, it is not true, as every year we find some difference."

We have attempted to show above that for this particular writing task the communicative act of 'making generalisations' was of high significance. Some students—a relatively small number—were able to perform this communicative act, with varying degrees of success; others failed, One might conclude that those who *were* able to make generalisations were more 'successful' in writing than those who were not. However, it was seen that the overall 'quality' of a piece of writing was not deperdent on a *single* feature—such as the ability to generalise; it seemed to depend on a complex of rhetorical features. For instance, a student who *was* able to generalise might have performed poorly on other communicative functions which were crucial to the success of writing.

An attempt was made to analyse all the scripts which were judged (by our informants) to be 'successful', and to see whether there were communicative acts which *all* of them had performed successfully. However, this attempt was not very successful. It was found that some of the writers who seemed to have performed many of the vital communicative acts and functions had performed poorly on the whole—in the opinion of our informants. However, the best scripts did contain many of the rhetorical features which the researcher judged to be desirable.

Another communicative act considered significant for this task was the identification of cause-effect relationships (since it was important for students to be able to *explain* facts).

The following example is instructive:

"In 1971 the rainfall decreased from 315 mm to 299 mm. Therefore the number of accidents also decreased from 15 to 12."

It seems to have been assumed here that the underlying cause-effect relationship (rainfall-accidents) will be self-evident, but this is not necessarily the case. It needs to be explained *why* a decrease in rainfall should lead to a decrease in the number of accidents. An important link in the chain of logic has been missed.

Here is another example:

"In 1975 the number of helmets sold increased from 165 to 215. Therefore, the number of accidents fell from 6 to 2."

Here again, the cause-effect relationship is not adequately established.

We shall close this analysis of the cognitive and rhetorical problems involved in this task with the consideration of a final rhetorical feature.

The tabular statement of data suggested, as should now be evident, two kinds of correlations. The number of accidents varied *directly* as the amount of rainfall (as several of the students were able to state) and *inversely* as the sale of helmets. This 'law' could effectively explain the pattern of motorcycle accidents for all the years from 1970 to 1976—with one important exception. That year was 1976.

The problem was: why were there more accidents in 1976 than in 1975, despite the lower rainfall and the greater sale of helmets?

In order to explain this, the students would have to 'make a guess' or, in other words, offer a hypothesis. This required both imagination and the ability to think logically. It was felt, in fact, that this was the most challenging cognitive and rhetorical problem involved in this task.

The great majority of students either *failed* to notice the problem or chose to ignore it. Only 16 (out of 100 students) made an explicit reference to the problem, and only 7 attempted to find an explanation.

Here is an example of a script in which the problem is recognised but not explained:

"In 1976, when 220 crash helmets were sold and the rainfall was 305 mm, the number of fatal accidents was 11. So, in this case, even though the number of helmets was more than in 1975, the number of fatal accidents was also greater, while the rainfall was less. We find

that the greater the rainfall, the higher was the number of accidents. And the greater the number of helmets sold, the smaller was the number of fatal accidents. *However, 1976 was an exception.*"

Here, now, are some of the 'explanations' offered:

"In 1971 the number of accidents was reduced due to the decrease in rainfall compared to 1970.....In 1974, the accidents were reduced because of the sale of helmets increasing....In 1976, the rainfall was 305 mm, the number of helmets sold 220, but the number of accidents increased to 11. Here, *the accidents were more, because of chance.*"

"This does not mean that if helmets are worn ... the accidents will be fewer; accidents will take place, *in the natural process*, as is seen in 1976, when the rainfall is 305 mm, and the helmets sold are 220 and the accidents are 11. *Accidents will happen: no one can check them or prevent them when they are to happen.*"

The following explanations were definitely more plausible:

"In 1976 there were 11 fatal accidents, *most probably due to rash driving.*"

"The year 1976 was an exceptional one. Though the rainfall was not high and the demand for helmets was at its highest level, the number of accidents was third highest. *This may be due to the carelessness of the riders*".

The most effective treatment of the problem was the following:

"In 1976 the rainfall was reduced to 305 mm, and the number of helmets sold was 220. Still, the number of accidents increased to 11.

We can draw one conclusion about the increase in the number of accidents. *Probably the riders using helmets felt that there was no danger for them, and rode in a careless manner.*"

5. Conclusion

We have, in the space available, been able to discuss only a few of the 'supra-grammatical' features of some scripts produced in response to one of the tests. It is to be hoped, however, that even this fragmentary analysis may have helped to illustrate some of the problems of communication, which we should like to designate as essentially cognitive and rhetorical, that students are generally called upon to grapple with in attempting to write.

It would have been noticed that the scripts being analysed *did* present interesting and meaningful material for discussion, though there were hardly any problems of grammatical correctness. (The remarkably high level of correctness was due, of course, to the fact that all these scripts had either been translated from the mother-tongue or edited.)

As a footnote, one might refer to a remark made by an 'informant' who very kindly agreed to participate in this experiment—a very senior teacher of English, with the highest of academic qualifications. He had not, of course, been told that the scripts offered to him for evaluation were not original pieces of writing produced in English by students. He was so agreeably surprised at not finding the usual abundance of errors that he remarked: "If our students can write like this, do they need us at all?"

It has, one hopes, been shown that our students do need us after all, no matter how correctly they may be able to write.

Department of Methods
CIEFL, Hyderabad 500 007, India.

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(Please refer also to the bibliographical notes appended to the author's paper "An Investigation of Some Advanced Skills of Composition", *CIEFL Bulletin*, XIV, 1, 43–62.)